

// ( )  
 // , ,  
 //

( )

\*

( ) :

) :

SPSS

(

*Paired-t test*

% % / , /  $\pm$  / ( ) :  
 HDL / (P < / ) LDL % /  
 (P < / P < / ) LDL/HDL Chol/HDL  
 :

( )

**HDL LDL**

:

( )

mahmoud\_baradaran2@yahoo.com :

..

|                 |  |                                       |  |
|-----------------|--|---------------------------------------|--|
| .( - )          |  | Poly - Unsaturated Fatty Acids (PUFA) |  |
| )               |  | Mono- Unsaturated Fatty               |  |
| .(              |  | Acids                                 |  |
| .( - )          |  |                                       |  |
| (LA)            |  | :                                     |  |
|                 |  | (LNA)                                 |  |
|                 |  | (PUFA)                                |  |
|                 |  | .( )                                  |  |
|                 |  | FAO WHO                               |  |
|                 |  | %                                     |  |
| )               |  | LNA LA                                |  |
| HDL LDL Chol TG |  | %                                     |  |
|                 |  | LA                                    |  |
|                 |  | .( )                                  |  |
|                 |  | Linium Usitatissimum                  |  |
|                 |  | (LNA)                                 |  |
|                 |  |                                       |  |
|                 |  |                                       |  |
|                 |  | ( LA / g LNA / g )                    |  |
| HDL             |  | .( )                                  |  |
| TG              |  | %                                     |  |
| LDL             |  | %                                     |  |
|                 |  | PUFA                                  |  |
|                 |  | LA                                    |  |
|                 |  | .( ) /                                |  |
|                 |  | ( - ) LNA %                           |  |
|                 |  |                                       |  |
|                 |  | .( )                                  |  |
|                 |  | ( )                                   |  |
|                 |  |                                       |  |
|                 |  | .( )                                  |  |

1



ml

HDL

HDL

)

(

Paired-t-test

| ( )   |           | /        |           |
|-------|-----------|----------|-----------|
| -     |           | .( )     | %         |
| .( )  | LDL       |          | (% / )    |
| .( )  | HDL       |          |           |
|       | HDL       |          |           |
| Lucas | Eristland | .( )     |           |
|       | ( )       | .( )     |           |
| HDL   |           |          |           |
| .( )  |           |          |           |
|       |           | % /      | / mg/dl   |
|       |           |          |           |
|       |           | .( - )   |           |
|       |           |          | Alekseeva |
|       |           | ( )      |           |
|       |           |          |           |
|       |           |          | Kim       |
|       |           | %        |           |
|       |           | .( )     |           |
|       | %         |          | % /       |
|       | (         |          | )         |
|       | (PUFA)    | LDL      |           |
|       | % /       | / mg/dl  |           |
| .( )  |           |          | % /       |
|       | %         |          |           |
|       | .( )      |          |           |
|       | Eristland | Alkseeva |           |

HDL

LDL

## REFERENCES

1. Zandi P, Yusefzadeh H. The guidelines for food oils. Iran: Industrial research and standard institutes publication. 1998; PP: 19-28.
2. Salaki F. A survey of fats and oral oils. Iran: Industrial and research nutrition institute publication. 2001; PP: 35-40.
3. Hodson L, Skeaff CM, Chisholm WA. The effect of replacing dietary saturated fat with polyunsaturated or monounsaturated fat on plasma lipids in free-living young adults. *Eur J Clin Nutr* 2001; 55(10): 908-15.
4. Binkoski AE, Kris-Etherton PM, Wilson TA, Mountain ML, Nicolosi RJ. Balance of unsaturated fatty acids is important to a cholesterol-lowering diet: comparison of mid-oleic sunflower oil and olive oil on cardiovascular disease risk factors. *J Am Diet Assoc* 2005; 105(7): 1080-6.
5. Norodoy A. Is there a rational use for n-3 fatty acids (fish oils) in clinical medicine? *Drug* 1991; 42: 331-42.
6. Kim JA, Sou L, Lee K. Flaxseed (Linseed) properties and benefits. Philadelphia: W.B Saunders Co. 2000; PP: 168-79.
7. Green A. Low-Linolenic flax: variation on familiar oilseed. *Inform* 1990; 1(11): 934-41.
8. Artimis PS. Essential fatty acids in health and chronic disease. *Am J Clin Nut* 1999; 70 (3): 560-569.
9. Nottleton JA. Omega-3 fatty acids and health. New York: Chapman & Hall, 1995.
10. Notletton JA. Omega-3 fatty acids: comparison of plant and seafood source in human nutrition. *J Am Diet Assoc* 1991; 91: 331-37.
11. Jenkins DJ, Kendall CW, Vidgen E, Agarwal S, Rao AV, Rosenberg RS, et al. Health aspect of partially defatted flaxseed, including effects on serum lipids, oxidative measures and ex-vivo androgen and progestin activity. *Am J Clin Nutr* 1999; 69: 395-402.

12. Lucas EA, Wild RD, Hammond LJ, Khalil DA, Juma S, Daggy BP, et al. Flaxseed improves lipid profile without altering biomarkers of bone metabolism in postmenopausal women. *J Clin Endocrinol Metab*. 2002; 87(4): 1527-32.
13. Prasad K. Hypcholesterolemic and antiatherosclerotic effect of flax lignan complex isolated from flaxseed. *Atherosclerosis*. 2005; 179(2): 269-75.
14. Mandasescu S, Mocanu V, Dascalita AM, Haliga R, Nestian I, Stitt PA, et al. Flaxseed supplementation in hyperlipidemic patients. *Rev Med Chir Soc Med Nat Iasi* 2005; 109(3):502-6.
15. Stuglin C, Prasad K. Effect of flaxseed consumption on blood pressure, serum lipids, hemopoietic system and liver and kidney enzymes in healthy humans. *J Cardiovasc Pharmacol Ther* 2005; 10(1): 23-7.
16. Harper CR, Edwards MC, Jacobson TA. Flaxseed oil supplementation does not affect plasma lipoprotein concentration or particle size in human subjects. *J Nutr*. 2006; 136(11): 2844-8.
17. Mandasescu S, Mocanu V, Dascalita AM, Haliga R, Nestian I, Stitt PA, et al. Flaxseed supplementation in hyperlipidemic patients. *Rev Med Chir Soc Med Nat Iasi* 2005; 109(3): 502-6.
18. Cunnane SC, Ganguli S, Menard C, Liedtke AC, Hamadeh MJ, Chen ZY, et al. High alpha-linolenic acid flaxseed: Some nutritional properties in humans. *Br J Nutr* 1993; 69: 443-53.
19. Chan JK, Brucke UM, McDonald BE. Dietary alpha-linolenic acid is as effective as oleic acid and linoleic acid in lowering blood cholesterol in normolipidemic men. *Am J Nutr* 1991; 53: 1230-4.
20. Alekseeva RL, Sharafetdinov KH, Plotnikova OA, Mal'tsev GI, Kulakova SN. Effect of diet including linseed oil on clinical and metabolic parameters in patients with type 2 diabetes mellitus. *Vopr pitan* 2000; 69 (6): 32-5.
21. Eriksen J, Anderson H, Seljeflot I, Hostmark AT. Long term metabolic effects of omega-3 polyunsaturated fatty acids in patients with coronary artery disease. *Am J Clin Nutr* 1995; 61: 831-6.
22. Phillipson BE, Rothrock DW, Connor WE, Harris WS, Illingworth DR. Reduction of plasma lipids, lipoproteins and apoproteins by dietary fish oils in patients with hypertriglyceridemia. *N Engl J Med* 1985; 312: 1210-6.
23. Simopoulos AP. Omega-3 fatty acids in health and disease and in growth and development. *Am J Clin Nutr* 1991; 54: 438-63.
24. Sirtori CR, Crepaldi G, Manzato E, Mancini M, Rivellesse A, Paoletti R, et al. One year treatment with ethyl esters and omega-3 fatty acids in patients with hypertriglyceridemia and glucose intolerance reduced triglyceridemia, total cholesterol and increased HDL-C without glycemic alteration. *Atherosclerosis* 1998; 137: 419-27.
25. Dewailly EE, Blanchet C, Gingras S, Lemieux S, Sauve L, Bergeron J, et al. Relations between omega-3 fatty acid status and cardiovascular disease risk factors among Quebecers. *Am J Clin Nutr* 2001; 5: 603-11.
26. Bierenbaum ML, Reichstein R, Warkins TR. Reduction of atherogenic risk in hyperlipidemic humans with flaxseed supplementation. A preliminary report. *Am J Clin Nutr* 1993; 12: 501-4.

- 
27. Harris WS. Fish oils and plasma and lipoprotein metabolism in humans: a critical review. *J Lipid Res* 1989; 30: 785-807.
28. Katan MB, Zock PL, Mensink RP. Dietary oils, serum lipoproteins, and coronary heart disease. *Am J Clin Nutr* 1995; 61: 1368-73.
29. Kelly GS. Conjugated linoleic acid: a review. *Altern Med Rev* 2001; 6(4): 367-82.